

**CLAIMS**

1. A system for reading a magnetic medium having several tracks of data which can be read in parallel, and comprising a detection device having at least as many detectors as there are tracks, making it possible to read simultaneously and at regular intervals a sample of data on each track, said detection device having a parallel/ series shift register receiving in parallel the samples of data read by the detectors at each read time and retransmitting them in series form, characterized in that it comprises:

◆ a processing circuit (M1) receiving each sample of data ( $x_i$ ) to be processed from each track, together with the sample ( $x_{(i-1)}$ ) of a first adjacent track and the sample ( $x_{(i+1)}$ ) of a second adjacent track, and calculating the cross-talk affecting the sample of data to be processed due to the adjacent tracks;

◆ an integration circuit (I1) receiving the cross-talk value thus calculated, integrating said values obtained at each read time, then integrating the values obtained at following read times;

◆ a relative track-following control circuit (CR) receiving the result of integration of the integrator circuit (I1) and supplying a track-following control signal for the detection device.

- said processing circuit comprising means making it possible to multiply the value of the sample to be processed:

- by +1 when the sample of the first adjacent track is negative and the sample of the second adjacent track is positive;

- by -1 when the sample of the first adjacent track is positive and the sample of the second adjacent track is negative;

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- by 0 when the samples of the adjacent tracks are of the same sign.
- 2. The system as claimed in claim 1, characterized in that the data medium is read using a light beam which is transmitted to the detection device after reading the data medium, and in that the relative track-following control circuit (CR) makes it possible to control a device for deflecting the light beam depending on the position of the detection device.
- 3. The system as claimed in claim 1, characterized in that the detection device comprises a greater number of detectors than there are tracks to read and in that it comprises:
  - an absolute position detection circuit (CTA) making it possible to identify the track read by each detector of the detection device;
  - a central control circuit (CC) controlling the operation of said processing circuit (M1) of said integration circuit (I1) and of said relative track-following control circuit (CR), then of the absolute position detection circuit.
- 4. The system as claimed in claim 3, characterized in that it comprises means for identifying, in the data read by each detector, one or more track identity data items.
- 5. The system as claimed in claim 4, characterized in that the tracks of the data medium comprise preamble zones containing said identification data.
- 6. The system as claimed in claim 5, characterized in that the preamble zones of the various tracks can be read simultaneously.

7. The system as claimed in claim 6, characterized in  
5 that the preamble zones have components which are  
positive or negative depending on the tracks and  
in that a circuit makes it possible to detect the  
tracks with positive continuous components and  
those with negative continuous components.

8. The system as claimed in claim 7, characterized in  
10 that the tracks of the recording medium are  
distributed in alternating groups of positive and  
negative components.

9. The system as claimed in claim 8, characterized in  
15 that it comprises groups of four tracks of  
positive components which alternate with groups of  
four tracks of negative components and in that it  
comprises:  
20 - a first summation circuit (S1) adding the  
signs of the samples detected by a first  
group of four detectors (b0 to b3) and the  
inverse of the signs detected by a second  
group of four detectors (b4 to b7);  
25 - a second addition circuit (S2) adding the  
signs of the samples detected by the first  
two detectors of the first group of detectors  
and the last two detectors of the second  
group and the inverse of the signs of the  
samples detected by the other detectors of  
these groups of detectors;  
30 - a table indicating the numbers of the tracks  
detected by said detectors according to the  
results of the additions carried out by the  
addition circuits.

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10. A recording medium comprising several tracks  
recordable in parallel, each one comprising a  
preamble zone recorded or recordable in parallel,  
said zones containing data making it possible to

locate the tracks one with respect to the others,  
characterized in that the preamble zones contain  
data with (nonzero continuous components,) the  
tracks being distributed in groups of tracks  
containing data with positive continuous  
components which alternate with groups of tracks  
with negative continuous components.

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